Mix Rack

for VENUE Systems

PN 9321-62801-00 REV C 12/12

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Documentation Feedback

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Safety Compliance

Safety Statement

This equipment has been tested to comply with USA and Canadian safety certification in accordance with the specifications of UL Standards: UL60065 7th /IEC 60065 7th and Canadian CAN/CSA C22.2 60065:03. Avid Inc., has been authorized to apply the appropriate UL & CUL mark on its compliant equipment.

Warning

Important Safety Instructions

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Only perform the services explicitly described in the install and or user manual. For services or procedures not outlined in the install or user manual, speak with authorized service personnel.

6) Do not use this equipment near water.

7) Clean only with dry cloth.

8) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

9) Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.

10) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

11) Protect power cords from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the equipment.

12) Only use attachments/accessories specified by the manufacturer.

13) For products that are not rack-mountable: Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the equipment. When a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.

14) Unplug this equipment during lightning storms or when unused for long periods of time.

15) Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.

16) For products that are a Mains powered device:
The equipment shall not be exposed to dripping or splashing and no objects filled with liquids (such as vases) shall be placed on the equipment.

Warning! To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.

17) For products containing a lithium battery:
CAUTION! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

18) The power inlet is the main disconnect device and should remain accessible. Disconnect the power cord before servicing the unit.

19) The equipment shall be used at a maximum ambient temperature of 40° C.

20) Disconnect power from mains before opening the product (console and Stage 48)

Rack-Mount Safety Instructions

1) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

2) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Stage 48 airflow is from the front of the chassis enclosure to the rear. Make allowances for cooling air to be available to the front panel surface and no restrictions at the rear.

3) Mechanical Loading - Mounting of the equipment in the rack should be such that ahazardous condition is not achieved due to uneven mechanical loading.

4) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

5) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

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Chapter 1: Introduction

VENUE Mix Rack from Avid® provides stage and local I/O in a single rack enclosure for VENUE systems.

Mix Rack is compatible with VENUE D-Show® and VENUE Profile™ consoles, and forms a complete VENUE system when paired with one of these consoles.

Mix Rack is also compatible with the VENUE Ethernet Snake card and Stage 48 remote stage boxes, enabling Ethernet audio snake connections from the Mix Rack to remotely located stage I/O.

Mix Rack Features

Audio I/O

Stage I/O

- 48 inputs with mic preamps for stage inputs. Each fully recallable input provides individually selectable phantom power, input gain, polarity invert, and a high-pass filter.
- 16 line-level outputs (expandable up to 32) to connect to mains and monitors.

FOH I/O

- 8 pairs of analog I/O that can be used for hardware inserts, or for input and output of line-level program material from the FOH position.
- Analog and Digital (AES or S/PDIF) 2-Track inputs and outputs.
- Com mic input, with gain control and phantom power.
- Monitor outputs to connect to near field monitor speakers at the mix position.

Synchronization and Control I/O

- MIDI In and Out ports, providing 16 channels of MIDI input and 16 channels of MIDI output
- Word clock I/O for digital clock synchronization
- USB 2.0 ports for USB disks, iLoks, and other USB devices
- 100 BaseT Ethernet (ECx) port for Ethernet-based remote control

CPU, DSP, and System Drives

Mix Rack houses the CPU, DSP, hard drive and CD-ROM drive that run the VENUE software on your VENUE system. VENUE software is installed at the factory. The CD-ROM drive lets you update or restore your VENUE system software, and install compatible plug-ins from their installer discs.

A standard Mix Rack includes two Mix Engine cards, which provide DSP for plug-ins and mixing. You can add an optional Mix Engine card, up to a maximum of three.

Redundant Power Supply Units (PSUs)

Each Mix Rack comes with two universal (100V to 240V nominal, 50–60 Hz) PSUs with auto redundant failover and LED status indication.

Included Components

The following components are included in a standard Mix Rack configuration:

- 1 Mix Rack unit with:
  - 3 AI16 Analog Mic/Line Input cards (16 channels each)
  - 1 AO16 Analog Output card (16 channels)
  - 2 Mix Engine cards
- 1 FOH Link cable (for connection to a VENUE console)
- 2 IEC power cables
- VENUE System Restore software CD
- VENUE Standalone software CD and user guides
- ECx Ethernet Control software
- VENUEPack plug-in bundle and iLok
- Clock source jumper cable (installation of this cable is required to enable redundant recording outputs using multiple HDx TDM or VENUE MADI Option cards)
- This guide

For more information on installing the clock source jumper cable in the Mix Rack and enabling redundant outputs using multiple installed HDx or VENUE MADI cards, see the HDx TDM Card guide or the VENUE MADI Card guide.

Expansion Options

I/O Options

Each Mix Rack supports a maximum of 3 input cards and 2 output cards for a total of up to 48 inputs and up to 32 outputs. Mix Rack expansion I/O options include:

AI16 Analog Mic/Line Input Card that provides 16 analog mic/line level inputs.

AO16 Analog Output Card that provides 16 analog line level outputs.

XO16 Analog and Digital Output Card that provides 8 analog line level outputs, and eight AES digital outputs.

AT16 A-Net Output Card that provides 16 channels of A-Net output compatible with Aviom® Personal Mixers and other Pro16™ Series devices.

IOx Input and output expansion card that provides eight channels of AES digital inputs and outputs, and eight pairs of analog 1/4–inch TRS inputs and outputs for hardware inserts.

Ethernet Snake Card I/O expansion card that provides Ethernet audio snake connections to up to two Stage 48 remote stage I/O boxes, letting you locate some or all of Mix Rack's stage I/O remotely. For more information, see the *Stage 48 Guide*.

DSP Expansion

An additional Mix Engine card can be added to the Mix Rack (up to a maximum of three Mix Engine cards) to increase the amount of DSP available for mixer and plug-in processing.

Record and Playback Options

FWx Record/Playback Option Card This FireWire-based option card lets you record or play back up to 18 channels of audio directly from Mix Rack with a Pro Tools system.

HDx Record/Playback Option Card This option card lets you record or play back up to 64 channels of audio directly from Mix Rack with a Pro Tools system.

VENUE MADI Option Card This option card lets you send or receive up to 64 channels of MADI digital audio to or from an external MADI device such as an Avid HD MADI interface (which you can use to record or playback audio with a Pro Tools system) or a third-party MADI device.

Operational Requirements

Temperature and Ventilation

Mix Rack should be operated away from heat sources and with adequate ventilation.

Storage

Mix Rack should be stored and transported at temperatures not lower than 0 degrees F (–18 degrees C) and not exceeding 140 degrees F (60 degrees C).

Operation

The Mix Rack unit should be operated at temperatures not lower than 40 degrees F (4 degrees C) and not exceeding 115 degrees F (40 degrees C).

Water and Moisture

Mix Rack should be operated away from sources of direct moisture and should be kept clear of liquids that might spill into the unit. If condensation is present on the unit, leave the unit to dry in ambient air for at least one hour before powering the unit on.

Cleaning and Maintenance

If you need to clean the surface of the Mix Rack, use a dry cloth. Do not apply any cleaning solutions, spray cleaners, or abrasives to the surface.

Power Connections

Each power supply in the Mix Rack requires its own power connection. Each power supply is auto voltage-selecting (100V to 240V). A modular IEC power cable is provided for each power supply in the unit.

Mix Rack Front Panel

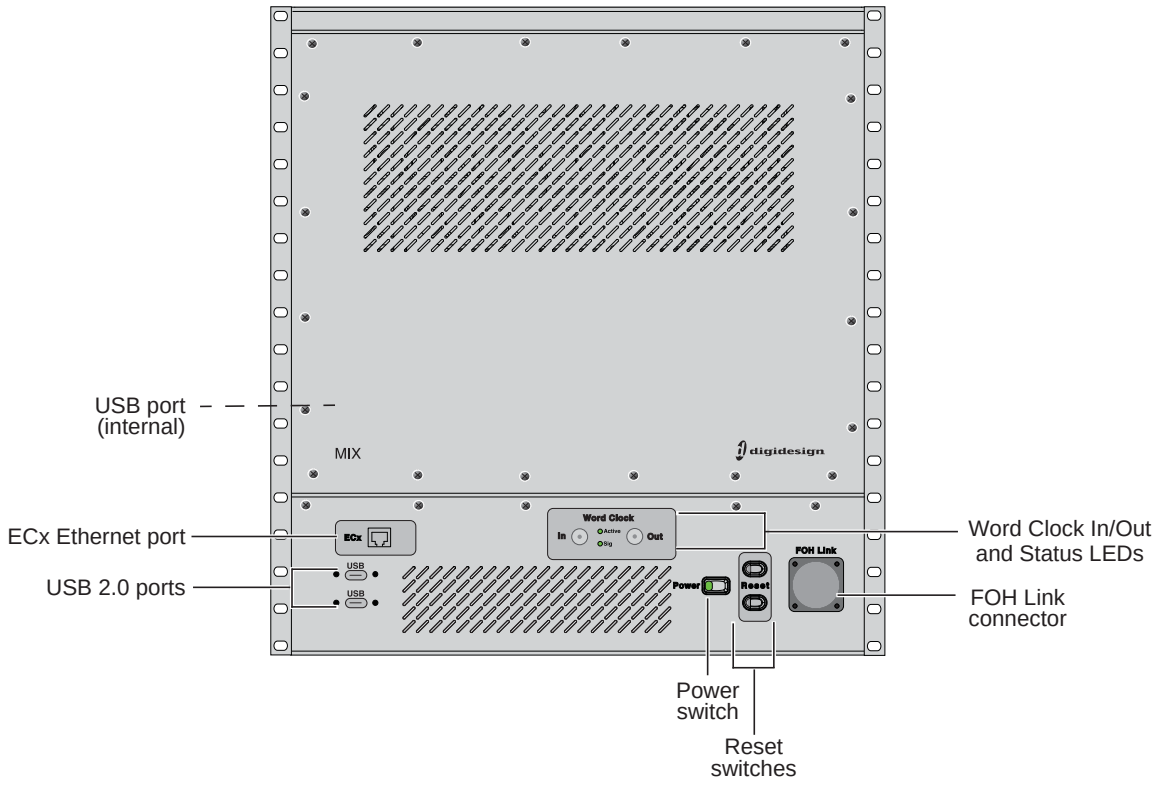

Figure 1. Mix Rack front panel

ECx Ethernet Port

Use the ECx port to connect a laptop, tablet, or a wireless router to Mix Rack to control your VENUE system remotely, enabled by ECx Ethernet Control host and client software. (This port does not support networking or any communication other than ECx, and is not compatible with Stage 48 remote stage boxes.)

To use ECx, you must first install the host and client software applications. See the VENUE D-Show Guide or the VENUE Profile Guide for more information on installing and using ECx.

USB Ports

Use the USB 2.0 ports on the front panel to connect iLoks, USB key disks and other USB devices. (An additional, secure USB port is located inside the Mix Rack chassis.)

Power Switch

The Power switch applies power to Mix Rack and starts the VENUE system.

Reset Buttons

Pressing both Reset buttons simultaneously initiates a full system restart.

Use the Reset buttons only in the event of an emergency.

Word Clock I/O

Use the Word Clock In and Word Clock Out ports to integrate external digital devices with Mix Rack.

Status LEDs

The Active and Sig LEDs indicate Word Clock status. Both the Active and Sig LEDs light green when the system is locked. Both LEDs blink red if there is a signal present but it cannot lock.

FOH Link Connector

Connect the FOH Link cable from the connector on Mix Rack to the connector on your console. This cable provides all the data and audio connections between your console and Mix Rack.

Mix Rack Back Panel

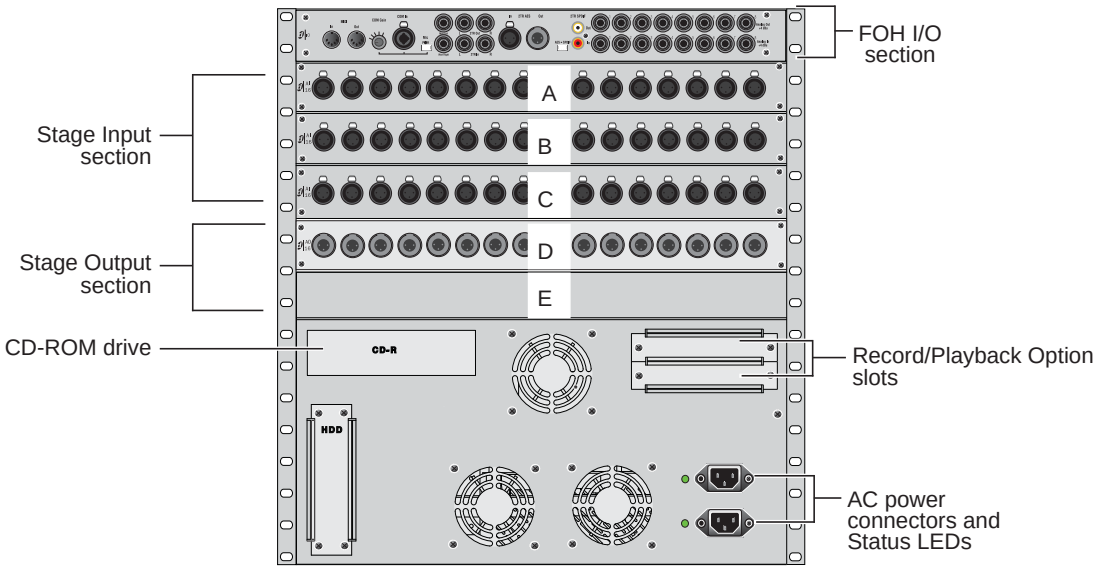

Figure 2. Mix Rack back panel, connectors, and I/O slots A–E

Stage Input and Output

Mix Rack has five slots available for Stage Input and Output. Slots A-C are available for input cards (the AI16 Analog Input card), while slots D and E are available for output cards (the AO16 Analog Output card, the XO16 Analog and Digital Output card, or the AT16 A-Net Output Card).

Stage Input Section

In its base configuration, the Stage Input section provides 48 channels of audio input, arranged in three rows of 16 channels, to connect stage input sources.

An analog multicore snake (not provided) is used to bring inputs from stage to the mix position.

Stage Output Section

In its base configuration, the Stage Output section provides 16 channels of stage output to connect to house/mains and stage monitors. Mix Rack can be expanded with other types of stage output (see “I/O Options” on page 2 for more information).

Ethernet Snake Card

You can convert your Mix Rack so it can be used with Stage 48 remote stage I/O boxes. Some or all existing stage I/O cards are removed from Mix Rack and installed in up to two Stage 48 remote stage boxes. An Ethernet Snake card is then installed in slot C of Mix Rack. See the *Stage 48 Guide* for more information.

CD-ROM Drive

The built-in CD-ROM drive is for installing software updates, plug-ins, and other data (such as a show file created and saved using the Standalone software). The CD-ROM drive is read-only. No data can be written to blank discs placed in the drive.

FOH I/O

The FOH I/O section includes connectors for audio (analog inserts, analog and digital 2-track inputs), synchronization (MIDI), and communication (Com mic input, with gain). For more information, see “FOH I/O Section” on page 5.

Record/Playback Options Slots

These slots let you add FWx, HDx, or VENUE MADI Option cards (see “Record and Playback Options” on page 2 for more information).

AC Power Connectors (2)

The AC Power connectors accept standard AC power cables, for powering each of the two internal Mix Rack power supply units. Mix Rack power supplies are auto-power selecting (100V to 240V, 50–60 Hz) and automatically work with a standard modular power cord when connected to an AC receptacle in any country.

FOH I/O Section

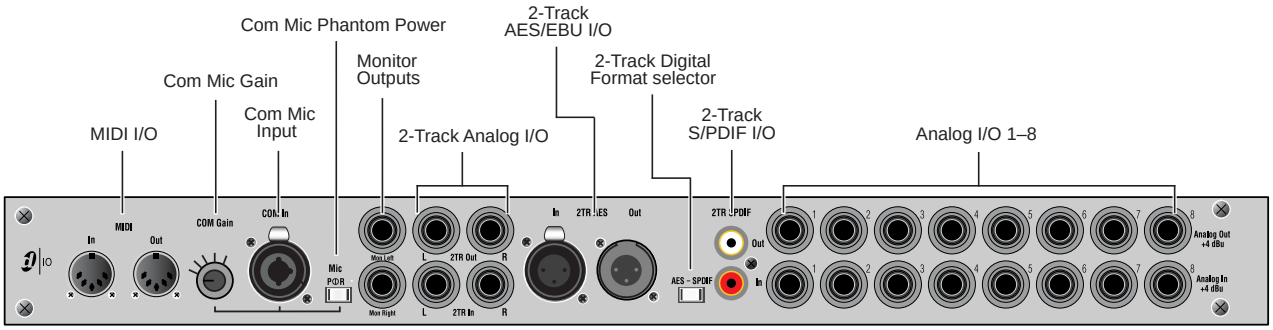

Figure 3. FOH I/O connectors on Mix Rack

MIDI I/O Ports

The MIDI In and Out Ports provide 16 channels of MIDI input and 16 channels of MIDI output to the system. The MIDI I/O ports are used in sending and receiving Snapshot MIDI messages, and in receiving MIDI Time Code from external devices.

Com Mic, Gain Control, and Phantom Power

The Com Mic connector and controls allow connection of a mic, or a line level source. The Com Mic input is a female XLR/TRS connector that accepts XLR or TRS jacks. The Gain control operates in steps of 3 dB. Phantom power may be applied to the Com mic with the Mic Power switch.

⚠ Do not connect an intercom system directly to the Com input, as some intercom systems use a signalling voltage which can damage the FOH IO card.

Monitor Outputs

Monitor Outputs are used for output to a near-field monitors or a cue mix system (not included). These are 1/4-inch balanced TRS connectors.

2-Track Analog Inputs and Outputs

The 2-Track analog connections are used for input and output of analog audio material. These are balanced 1/4-inch TRS connectors.

2-Track Digital Inputs and Outputs

The 2-Track digital connections are used for input and output of digital audio material. Stereo AES/EBU or S/PDIF I/O connectors are selectable with the AES–SPDIF switch. These connectors support 24-bit, 48 kHz digital signals. Input signals with other sample rates are sample-rate converted to 48 kHz.

Analog I/O (1–8)

The 8 pairs of analog inputs and outputs are used for hardware inserts, outboard gear, or for input and output of program material from the mix position. These are balanced, 1/4-inch TRS connectors.

IOx

You can expand Mix Rack's local analog and digital I/O by installing an IOx card. IOx must be installed in slot A (directly below the FOH I/O section). Existing stage I/O cards must be rearranged. See the *IOx Card* guide for more information.

FOH Link Cable

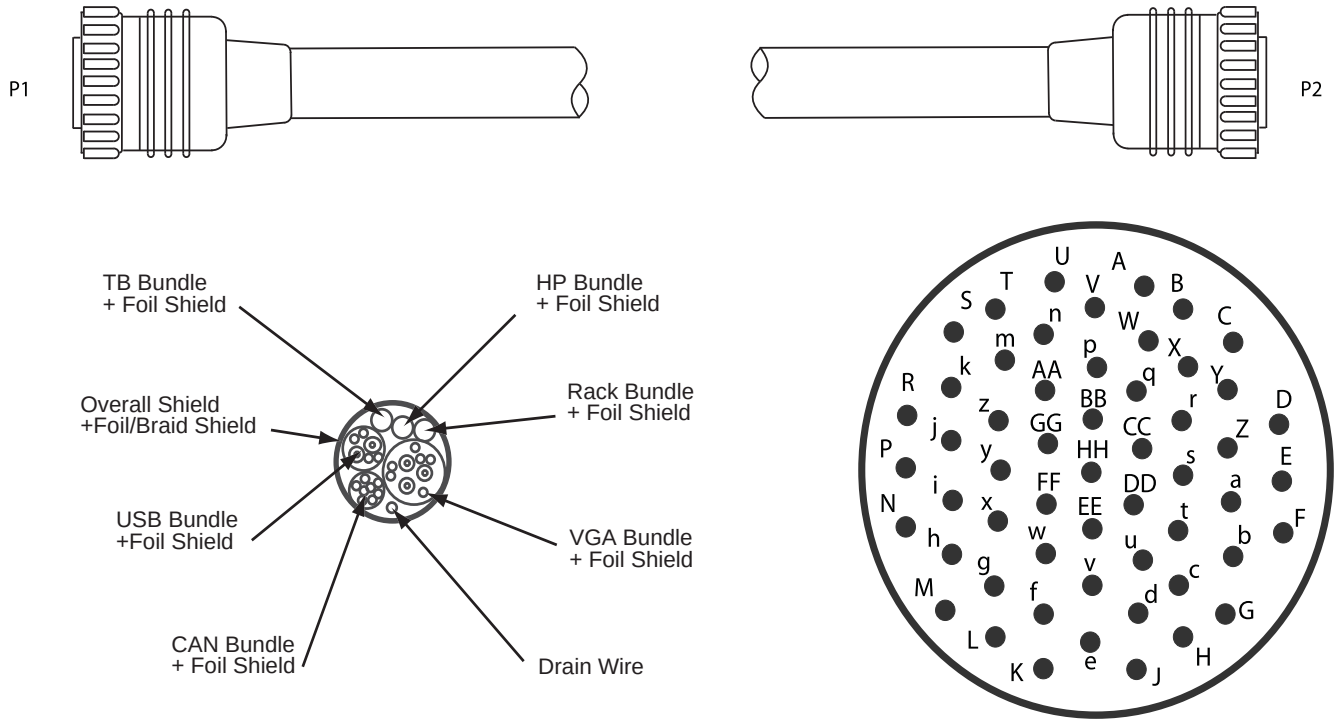

Figure 4. FOH Link cable specifications and connector pinout diagram

Connector Specifications

P1: KPT 60 ZIFF connector w/ metal backshell

- Cannon P/N: KPSE06E22-55PF42F0 (housing)
- Cannon P/N: 030-9036-000 (contacts)

P2: KPT 55 Position w/ cable clamp, solder cup

- Cannon P/N: KPSE06E22-55PF42F0 (housing)
- Cannon P/N: 030-9036-000 (contacts)

Cable Specifications

VGA Bundle:
3 x 75 Ohm Coax, 2 x 24 awg Pair, 3 x 28awg
+ Foil and Braid shield

USB Bundle:
1 x 28 awg Pair, 4 x 24awg + Drain
+ Foil and Braid shield

Rack Bundle:
5 x 28 awg, Foil shield

Talkback (TB) Bundle:
4 x 28 awg, Foil shield

Headphone (HP) Bundle:
4 x 28 awg, Foil shield

CAN Bundle:
9 x 28 awg, Foil shield

Overall Shield: 360 degree Foil and 65% Braid + Drain

Overall Jacket: PVC, Black, UL

Connect all shields to the connector shell and to position EE on each connector.

Connector Pinouts

FOH Link cable VGA BUNDLE pinouts

P1	VGA BUNDLE	P2
U	RED DATA	U
A	GREEN DATA	A
T	BLUE DATA	T
V	ID	V
B	RED GND	B
S	GREEN GND	S
n	BLUE GND	n
W	GND	W
C	ID	C
m	ID	m
p	HSYNC	p
X	VSYNC	X
k	VGA SHIELD	k

FOH Link cable RACK BUNDLE pinouts

P1	RACK BUNDLE	P2
HH	RACK PSU	HH
BB	RACK GND	BB
CC	RACK SHD	CC
DD	SPR 1	DD
GG	SPR 2	GG

FOH Link cable TALKBACK BUNDLE pinouts

P1	TB BUNDLE	P2
R	TB P	R
j	TB N	j
y	TB GND	y
P	TB SHEILD	P

FOH Link cable HEADPHONE BUNDLE pinouts

P1	HP BUNDLE	P2
N	HP L	N
i	HP R	i
h	HP GND	h
M	HP SHEILD	M

FOH Link cable CAN BUNDLE pinouts

P1	CAN BUNDLE	P2
Y	CAN 1 H	Y
r	CAN 1 L	r
Z	CAN 2 H	Z
s	CAN 2 L	s
a	CAN 3 H	a
b	CAN 3 L	b
E	CAN 4 H	E
F	CAN 4 L	F
D	CAN CS	D

FOH Link cable USB BUNDLE pinouts

P1	USB BUNDLE	P2
K	USB 5+	K
J	USB GND	J
H	USB D+	H
d	USB D–	d
G	USB SHIELD	G
f	USB +5	f
c	USB GND	c

Not connected: AA, FF, z, x, w, v, u, t, q, e, L, g

Chapter 2: Connecting the Mix Rack

Connecting Consoles to Mix Rack

Mix Rack can be used with Profile or D-Show Main unit/Sidecar consoles.

To connect Profile and Mix Rack:

- Connect one end of the FOH Link cable to the FOH Link port on the back panel of the Profile console. Connect the other end of the FOH Link cable to the FOH Link port on the front panel Mix Rack. On each end, be sure to align the notch in the connector housing with the slot in the plug, and to rotate the collar until the connector is fully latched.

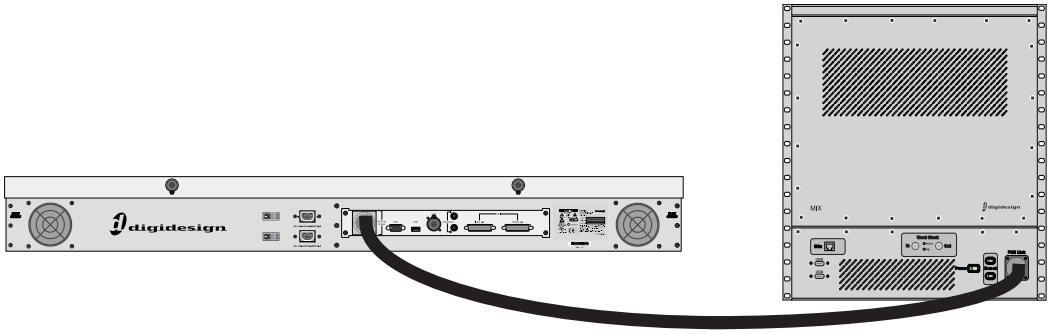

Figure 5. FOH Link connection between Profile (left) and Mix Rack (right)

To connect the D-Show Main Unit and Mix Rack:

- Connect one end of the FOH Link cable to the FOH Link port on the back panel of the Main unit. Connect the other end of the FOH Link cable to the FOH Link port on the front panel Mix Rack. On each end, be sure to align the notch in the connector housing with the slot in the plug, and to rotate the collar until the connector is fully latched.

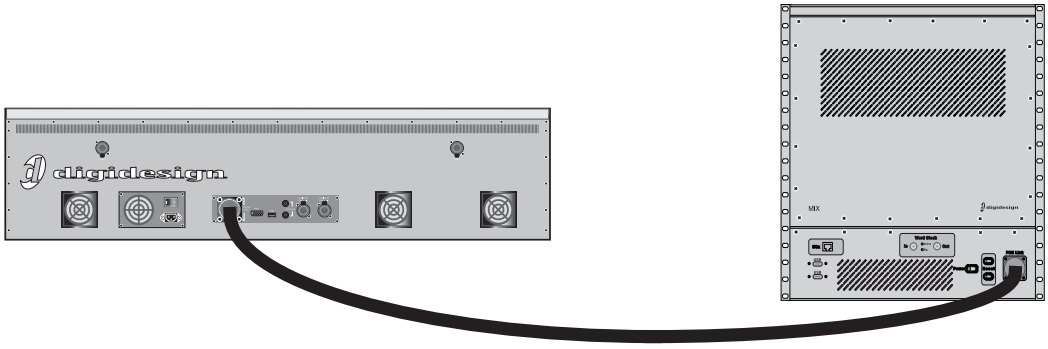

Figure 6. FOH Link connection between D-Show Main unit (left) and Mix Rack (right)

Audio Connections

Mix Rack provides 48 analog mic/line stage inputs, up to 32 analog line stage outputs, and a variety of analog and digital audio inputs and outputs. You can use an analog multicore snake cable (not included) to carry multiple stage inputs and outputs to and from the Mix Rack, or you can connect mics, instruments and other sources directly to Mix Rack Stage inputs, and connect Mix Rack Stage outputs directly to the inputs on your house/mains systems, monitor systems, or other.

For outboard effects processors, communications, and similar needs, see “FOH I/O Section” on page 5.

For audio connections to and from Stage 48 remote stage boxes, see the Stage 48 Guide.

Stage I/O

Use the following sections to identify where to connect stage and FOH I/O to Mix Rack.

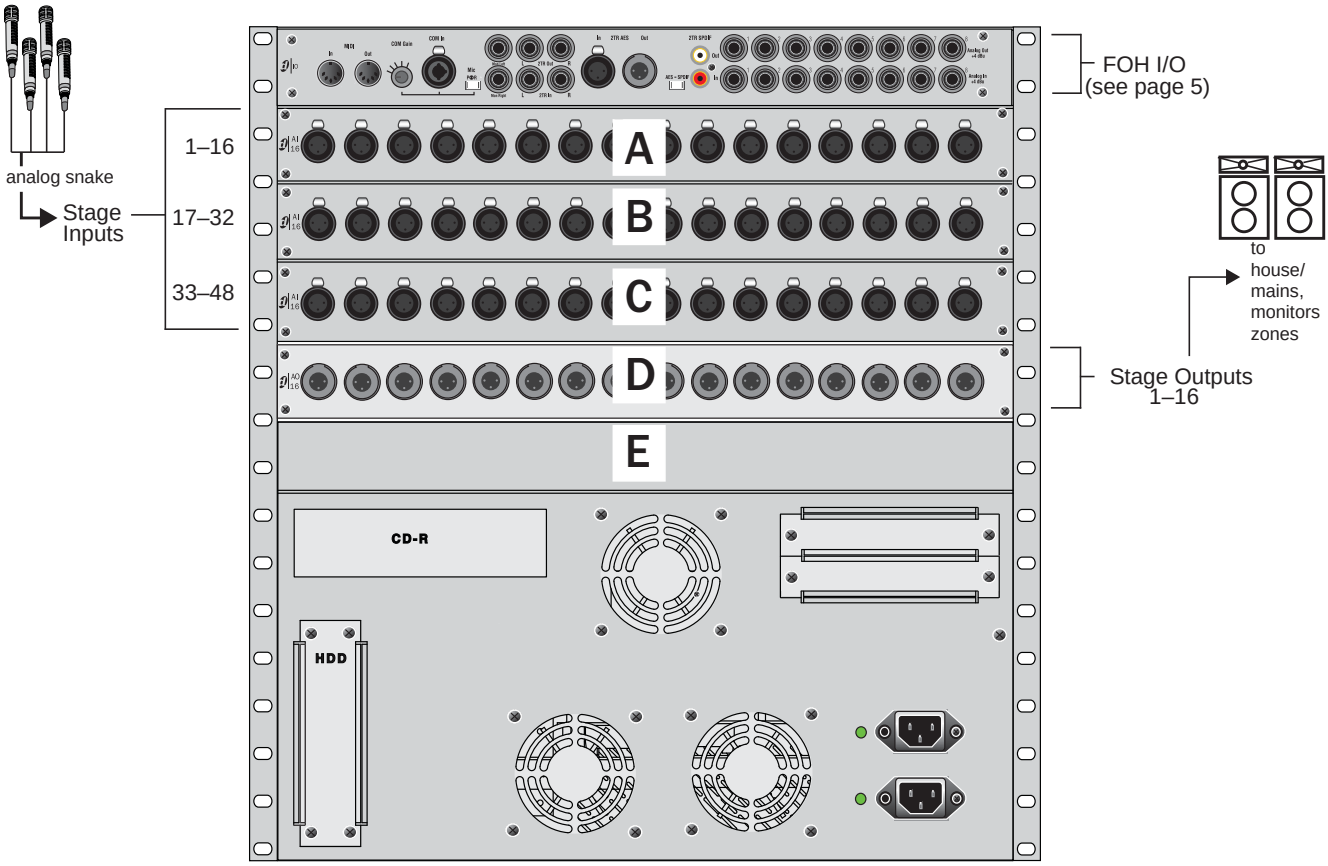

Figure 7. Mix Rack audio connectors and I/O slots (A–E) for stage inputs and outputs

Stage Inputs 1–48

(Analog Mic/Line XLR Inputs)

The Stage Input section provides 48 channels of analog mic/line inputs (XLR), to connect stage input sources. You can use a standard analog snake cable to run lines from the stage to the Mix Rack (analog snake cable not included). Then connect the snake to Stage inputs 1–48.

You can apply 48V phantom power to any Mix Rack XLR input.

To apply phantom power to a Mix Rack input source:

1 Target a channel in the ACS section of the console.

2 Press the +48V switch in the ACS Input section.

Stage Outputs 1–16

(Analog Line XLR Outputs)

The Stage Output Section provides up to 32 channels of stage output (XLR), to connect to house/mains, monitors, additional zones, or feeds to other devices.

Ancillary Connections

(AC Power, Synchronization and Optional Connections)

AC Power Connectors

The AC Power connectors accept standard AC power cable, for powering each of the two (redundant) internal Mix Rack power supply units. Mix Rack power supplies are auto-power selecting (100V to 240V, 50–60Hz) and automatically work with a standard modular power cord when connected to an AC receptacle in any country.

ECx Port

The ECx port lets you connect an RJ-45 Ethernet cable for remote control of the system from a laptop or tablet computer.

See the VENUE D-Show Guide or the VENUE Profile Guide for more information on ECx.

USB Ports

The USB ports on the front panel of the Mix Rack are USB 2.0 ports, letting you connect iLoks, USB key disks and other USB devices. (An additional, secure USB port is located inside the Mix Rack chassis as well; use this internal port to connect and secure a pre-loaded iLok to always be available to that Mix Rack system.)

FOH Link Connector

(See “Connecting Consoles to Mix Rack” on page 9.)

Word Clock I/O

The Word Clock In and Out ports provide transmission and reception of word clock signals, letting your synchronize external digital devices with your VENUE system.

Powering the System Up and Down

Powering Up

Faders move when power is turned on. Before powering up the system, make sure all fader paths are clear of obstructions.

Power up the system in the following sequence:

1. If applicable, power up any Stage 48 remote stage boxes. Wait for the Stage 48(s) to initialize. Initialization is complete when the Power and Status LEDs on the Stage 48 front panel are lit solid green.
2. Your console.
3. Mix Rack.
4. Any connected computers for recording/playback options.
5. Audio monitoring system.

Powering Down

Power down the system in the following sequence:

1. Audio monitoring system.
2. Any connected computers for recording/playback options.
3. Mix Rack.
4. Your console.
5. Any connected Stage 48 remote stage boxes.

Restarting the System

If at any time during setup or performance it becomes necessary to restart the system, you can restart the entire system or reset individual hardware devices.

For more information on restarting your VENUE system and resetting system hardware, see the Troubleshooting chapter of the guide that came with your console (VENUE Profile Guide, or VENUE D-Show Guide).

Configuring your System with a Mix Rack

When using a VENUE system with a Mix Rack, some system configuration settings will be unavailable or different from those on other VENUE systems. Be aware of the maximum possible configurations whenever transferring show files, presets, or other data between VENUE systems.

Maximum System Configuration

Maximum Mix Rack Configuration

Parameter	Max
Mix Engines	3
Mic Inputs	48
Input Channels	80
FX Returns	16
Graphic EQs	24

How to Proceed

To learn how to operate your VENUE system, see the *VENUE Profile Guide* or *VENUE D-Show Guide* that came with your console.

Chapter 3: Mechanical Specifications

Mix Rack Mechanical Specifications

Mix Rack Specifications (Maximum Configuration)	
Dimensions (H x W x D)	19.25 x 19 x 18 inches (489 x 483 x 458 mm)
Rack Spaces	11 U
Weight	117 lbs (45.4 kg)
Power Requirements	AC 100–240V, 50–60 Hz, 360 W
Word Clock In/Out Connectors	BNC female (2)
USB Ports (3, including internal))	USB 2.0
FOH Link Connector	MIL connector
Max FOH Link Cable Length	11 ft. (3.35 m)

Environmental

Parameter	**Specification**	**Limit**	**Units**	**Condition/Comment**
Storage Temperature	0 to +140		deg F	–18 to +60 deg C
Operating Temperature	+40 to +115		deg F	+4 to +40 deg C
Storage humidity range	5 to 95		%	Non-condensing
Operating humidity range	20 to 80		%	Non-condensing

Chapter 4: Audio Specifications

Mix Rack General Audio Specifications

Audio, general

Parameter	Specification	Limit	Units	Condition/Comment
Internal Sample Rate	48		kHz	
External Sample Rate	48 +/– 10 ppm (word clock input)		kHz	
Processing Delay (latency)	Less than 2.3	max	ms	48 channels, stage input through L–R bus to stage output
Internal Process-ing	up to 48-bit, fixed point			288 dB internal dynamic range
Frequency Response	+/– 0.2		dB	20 Hz – 20 kHz BW, relative to 1 kHz
Dynamic Range	110	min	dB	Analog stage input to analog stage output, re +24 dBu, A-weighted, 20 Hz – 20 kHz BW
Crosstalk	–100	max	dB	Adjacent Stage inputs to L–R bus, @ 1 kHz
Residual Output Noise	–90	max	dBu	20 Hz – 20 kHz BW
Maximum Volt-age Gain	84		dB	Stage input to L–R bus, channel & L–R faders @ max

All measurements at Fs=48 kHz with 150 Ohm source impedance and 600 Ohm load impedance, unless otherwise specified.

0 dBU = 0.775Vrms.

Stage Inputs and Outputs

Stage Inputs

AI16 Analog Mic/Line Inputs

Parameter	Specifications	Limit	Units	Condition/ Comment
Type	Balanced, XLR3-Female			
Gain	+10 to +60		dB	6 dB analog steps with 0.1 dB digital increments and crossfade at analog relay switch point
Max Input Level	+32		dBu	Pad ON
Pad	20		dB	
Input Impedance, pad OFF	5.5k		Ohm	Each leg to ground
Input Impedance, pad ON	3.8k		Ohm	Each leg to ground
Phantom Power	+48		VDC	10 mA max per channel
EIN	–126	max	dBu	Max gain, 150 ohm source, 20 Hz–20 kHz BW, unweighted
THD + N	0.003		%	Minimum gain, pad OFF, –1 dBFS output, 20 Hz–20 kHz BW
A/D Converter Latency	0.25		ms	Fs=48kHz

Stage Outputs

AO16 Analog Line Outputs

Parameter	Specifications	Limit	Units	Condition/ Comment
Type	Balanced, XLR3-Male			
Impedance	50		Ohm	Each leg to ground
Maximum Output Level	+24	max	dBu	
D/A Converter Latency	0.58		ms	Fs=48kHz

FOH Inputs and Outputs

FOH Input

Analog Line Inputs 1–8; 2–Track Analog Inputs

Parameter	Specification	Limit	Units	Condition/Comment
Type	Balanced, 1/4-inch TRS Female			
Maximum Input Level	+24	max	dBu	
Input Impedance	10k		Ohms	
THD+N	0.003	max	%	–1 dBFS output, 20 Hz to 20 kHz BW

2–Track AES Input

Parameter	Specification	Limit	Units	Condition/Comment
Type	XLR3-F			
Format	AES/EBU			
Termination	110		Ohm	
Word Length	24		bit	
Sample Rate	48		kHz	
Sample Rate Conversion (SRC)	32 to 96		kHz	Always active

2–Track S/PDIF Input

Parameter	Specification	Limit	Units	Condition/Comment
Type	Unbalanced, co-axial (RCA)			
Format	S/PDIF (IEC-60958 Type II)			
Termination	75		Ohm	
Word Length	24		bit	
Sample Rate	48	nom	kHz	
Sample Rate Conversion (SRC)	32 to 96		kHz	Always active

Com Input (XLR/TRS)

Parameter	Specification	Limit	Units	Condition/Comment
Type	Neutrik combi XLR/TRS			
Sensitivity	–2 to –32		dBu	Equals 0 dBFS. Switch-able in 6 gain steps
Phantom Power	+15		VDC	6mA (switchable on Mix Rack back panel)
Input Impedance	20k		Ohms	

Talkback Mic Input (XLR)

Parameter	Specification	Limit	Units	Condition/Comment
Type	XLR3-F			
Sensitivity	–20		dBu	fixed
Phantom Power	+15		VDC	6mA (always on)
Input Impedance	20k		Ohms	

FOH Output

Analog Line Outputs 1–8; 2–Track Analog Outputs; Monitor L/R

Parameter	Specification	Limit	Units	Condition/Comment
Type	Balanced, 1/4-inch TRS Female			
Maximum Output Level	+24	max	dBu	
Output Impedance	50		Ohm	

2–Track AES Output

Parameter	Specification	Limit	Units	Condition/Comment
Type	XLR3-M			
Format	AES/EBU			
Word Length	24		bit	
Sample Rate	48		kHz	
Sample Rate Conversion (SRC)	None			
Dithering	None			
Channel Status Info	Pro, Audio 48K, No Emphasis			
Max Cable Length	100		meter	Without equalization, 110 ohm cable

2–Track S/PDIF Output

Parameter	Specification	Limit	Units	Condition/Comment
Type	Unbalanced, co-axial (RCA)			
Format	S/PDIF (IEC-60958 Type II)			
Output Impedance	75		Ohm	
Word Length	24		bit	
Sample Rate	48		kHz	
Sample Rate Conversion (SRC)	None			
Dithering	No			
Channel Status Info	Consumer, Audio, 48K, Non-copy, 2-Channel, General Category, Level 2 Clock			

Headphone Output

Parameter	Specification	Limit	Units	Condition/Comment
Type	Unbalanced, 1/4-inch TRS Female			Located on console
Output Impedance	50		Ohm	
Max RMS Power Output	20		mW	at +21 dBu with 32 Ohm headphones
	130		mW	at +21 dBu with 600 Ohm headphones

Synchronization and Control I/O

Ancillary	Connector	Count	Type
MIDI In	5-Pin DIN F	1	
MIDI Out	5-Pin DIN F	1	
Word Clock In	BNC-F	1	
Word Clock Out	BNC-F	1	
FOH Link	Multi-Pin	1	55-pin
Ethernet (ECx)	RJ-45	1	100BaseT

Appendix A: Compliance Information

Environmental Compliance

Disposal of Waste Equipment by Users in the European Union

This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

Proposition 65 Warning

⚠ *This product contains chemicals, including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.*

Perchlorate Notice

This product may contain a lithium coin battery. The State of California requires the following disclosure statement: “Perchlorate Material – special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate.”

Recycling Notice

EMC (Electromagnetic Compliance)

Avid declares that this product complies with the following standards regulating emissions and immunity:

- FCC Part 15 Class B
- EN 55103-1 E2, E3
- EN 55103-2 E2, E3
- AS/NZS CISPR 22 Class B
- CISPR 22 Class B

FCC Compliance for United States

Radio and Television Interference

Communication Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any modifications to the unit, unless expressly approved by Avid, could void the user's authority to operate the equipment.

Australian Compliance

Canadian Compliance

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le material brouilleur du Canada.

CE Compliance

(EMC and Safety)

Avid is authorized to apply the CE (Conformité Européenne) mark on this compliant equipment thereby declaring conformity to EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.

Korean EMC Regulations

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

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